

Attorney's Docket: 2003DE417
Serial No.: 10/817,371
Art Unit 1713
Response to Office Action of 09/15/2005

REMARKS/ARGUMENTS

The Office Action mailed September 15, 2005 has been carefully considered together with each of the references cited therein. The amendments and remarks presented herein are believed to be fully responsive to the Office Action. Accordingly, reconsideration of the present Application in view of the following remarks is respectfully requested.

Applicant has amended the Application to attend to housekeeping matters and to more clearly describe the invention. Claim 7 was amended to depend from claim 1. Support for these amendments may be found in originally filed claims 1 and 7. Claim 9 has been deleted. Support for new claims 15 and 16 which recite solvents may be found in Applicant's Specification in paragraph [00024]. It is not believed that any new matter was introduced by these amendments, and that no additional search is required by the office.

Claims 1-14 were rejected under 35 U.S.C. 103(a) as being unpatentable over Loeffler et al. (US Patent Application No. US 2001/00129287) in view of Falchi et al. (US Patent 5,728,783). The rejection of claim 1 under 35 U.S.C. 103(a) as being unpatentable over Loeffler et al. (US Patent Application No. US 2001/00129287) in view of Falchi et al. (US Patent 5,728,783) should be withdrawn for the reason that Loeffler et al. does not disclose the steps of the instant invention wherein a second solvent or solvent mixture is added to the polymerization mixture prior to the removal of a polymerization medium (e.g., a first solvent) and the combination with Falchi et al. is improper, because Falchi et al. teach away from the instant invention. Falchi et al. discloses a polymerization reaction and polymer solution recovery process for a completely different polymer which removes monomers and a minimum quantity of solvent. Falchi et al. does add more of the same solvent or a solvent of the same class, but Falchi et al. teaches away from removing the first solvent from the polymerization slurry. Furthermore, there is no motivation for anyone skilled in the art to combine the Loeffler and Falchi references for the reason that Falchi et al. teach away from the invention.

Applicant's invention relates to a process for producing a polymer concentrate of the type of polymer disclosed in Loeffler et al., wherein Applicant discovered that by adding a second higher-boiling solvent, that has a boiling point of at least 10 °C greater than the polymerization medium (first solvent), to the polymerization medium, followed by a step to remove the polymerization medium, the resulting polymer concentrate could be produced without crystallization, precipitation, and/or drying steps. Applicant's process represents a

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process improvement which significantly lowers recovery costs over conventional separation of the polymer from the polymerization medium which requires recovery of the polymer, followed by dispersion of the polymer with a desired solvent.

The patent to Falchi et al. relates to polymerization processes to produce elastomeric copolymers of ethylene. The ethylene-based polymers of Falchi et al. are significantly different from the aqueous soluble and water swellable polymers of the instant invention. No one skilled in the art of aqueous based polymerization reactions and recovery methods would be motivated to look to the art of ethylene-based polymers which are typically insoluble in aqueous media. In the process of Falchi et al., polymerization of monomers is carried out in a solvent (polymerization medium) to provide a reaction slurry comprising unreacted monomers and the polymer. The reaction slurry is first flashed to remove a portion of the unreacted gaseous monomers and a minimum amount of solvent or polymerization medium. The remaining amount of slurry is mixed with additional amount of the same solvent or a different solvent of the same class and the resulting mixture is subject to a degassing step in the presence of a moist air stream to deactivate any catalyst and to further reduce the remaining amount of monomer. No polymerization medium (solvent) is disclosed as being removed in the degassing step. (See column 7, lines 50). None of the examples in the Falchi et al. reference disclose the removal of the polymerization medium (first solvent) in which the polymerization is carried out. Thus, Falchi et al. teaches away from the instant invention by retaining essentially all of the first solvent or polymerization medium in the polymer product. (See Falchi et al. further removes the remaining monomer by bubbling a wet air stream through the polymer/solvent mixture—See Abstract (b) and Column 4, lines 24-30). Applicant's invention recites a polymerization process which does not include a monomer removal or a catalyst deactivation step. In addition Applicant's invention teaches the removal of the polymerization medium (first solvent) after the addition of a [second] higher boiling solvent, wherein the higher-boiling solvent which differs in boiling point for the polymerization medium by at least 10 °C. By Falchi et al. only removing the unreacted monomer and teaching the further addition of a second solvent or additional amounts of the first solvent, Falchi et al. teaches away from Applicant's invention. No one skilled in the art would find any combination of the Loeffler et al. publication and the Falchi et al. reference which would produce Applicant's claimed invention. Furthermore, there can be no motivation to combine the Loeffler et al. reference with the Falchi et al. patent when the Falchi et al. reference teaches away from the instant invention. Applicant's invention must be considered as a whole. Therefore, the rejection of claim 1 under 35 U.S.C. 103(a) as

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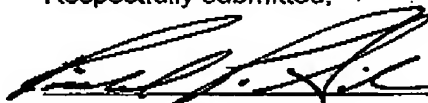
being unpatentable over Loeffler et al. (US Patent Application No. US 2001/00129287) in view of Falchi et al. (US Patent 5,728,783) should be withdrawn for the reason that the Loeffler et al reference is silent on any introduction of a second, higher-boiling solvent and subsequent removal step of the first solvent. Even though the Falchi et al. reference discloses the possibility of introducing a second solvent to the polymerization slurry, Falchi et al. specifically teach away from removal of any of the first solvent, or polymerization medium.

The rejection of claims 2-8 and 10-14 under 35 U.S.C. 103(a) as being unpatentable over Loeffler et al. (US Patent Application No. US 2001/00129287) in view of Falchi et al. (US Patent 5,728,783) should be withdrawn for the reasons given in support of claim 1 from which they depend.

It is respectfully submitted that, in view of the above remarks, the objections to the application and rejections under 35 U.S.C. §103 should be withdrawn and that this application is in a condition for an allowance of all pending claims. Accordingly, favorable reconsideration and an allowance of all pending claims are courteously solicited.

An early and favorable action is courteously solicited.

Respectfully submitted,



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